

Practitioner's Docket No. NEB-181

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Vaisvila, et al.

Application No.: 09 /689,343 Group No.: 1636

Filed: October 12, 2000 Examiner: D. Guzo

For: Method For Cloning And Producing The MseI Restriction Endonuclease

RECEIVED

MAY 21 2002

TECH CENTER 1600/2900

Box Sequence, PO Box 2327

Assistant Commissioner for Patents

Washington, D.C. 20231 XXXX Arlington, VA 22202

**SUBMISSION OF "SEQUENCE LISTING," COMPUTER READABLE COPY,
AND/OR AMENDMENT PERTAINING THERETO
FOR BIOTECHNOLOGY INVENTION CONTAINING NUCLEOTIDE
AND/OR AMINO ACID SEQUENCE**

(check and complete this item, if applicable)

- 1.
- ☒
- This replies to the Office Letter dated
- May 3, 2002

NOTE: If these papers are filed before the office letter issues, adequate identification of the original papers should be made, e.g., in addition to the name of the inventor and title of invention, the filing date based on the "Express Mail" procedure, the application number from the return post card or the attorney's docket number added.

- ☒
- A copy of the Office Letter is enclosed.

CERTIFICATION UNDER 37 C.F.R. §§ 1.8(a) and 1.10*

(When using Express Mail, the Express Mail label number is **mandatory**;
Express Mail certification is optional.)

I hereby certify that, on the date shown below, this correspondence is being:

MAILING

- ☒
- deposited with the United States Postal Service in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231

37 C.F.R. § 1.8(a)

- ☒
- with sufficient postage as first class mail.

37 C.F.R. § 1.10*

- ☐
- as "Express Mail Post Office to Addressee"

Mailing Label No. _____ (mandatory)

TRANSMISSION

- ☐
- transmitted by facsimile to the Patent and Trademark Office.

Signature

Melissa A. Jackson

Date:

5.14.02

(type or print name of person certifying)

***WARNING:** Each paper or fee filed by Express Mail **must** have the number of the "Express Mail" mailing label placed thereon prior to mailing. 37 C.F.R. § 1.10(b).

"Since the filing of correspondence under § 1.10 without the Express Mail mailing label thereon is an oversight that can be avoided by the exercise of reasonable care, requests for waiver of this requirement will **not** be granted on petition." Notice of Oct. 24, 1996, 60 Fed. Reg. 56,439, at 56,442.

(Submission—Nucleotide and/or Amino Acid Sequence [9-37]—page 1 of 6)

NOTE: "If the computer readable form of a new application is to be identical with the computer readable form of another application of the applicant on file in the Office, reference may be made to the other application and computer readable form in lieu of filing a duplicate computer readable form in the new application. The new application shall be accompanied by a letter making such reference to the other application and computer readable form, both of which shall be completely identified." 37 C.F.R. § 1.821(e).

- E. ☒ A statement that the content of each "Sequence Listing" submitted and each computer readable copy are the same, as required in 37 C.F.R. § 1.821(g).
- ☐ Because the statement is not made by a person registered to practice before the Office, the statement is verified as required in 37 C.F.R. § 1.821(b).
- F. ☒ Because this submission is made in fulfilling the requirement under 37 C.F.R. § 1.821(g), a statement that the submission includes no new matter.
- ☐ Because the statement is not made by a person registered to practice before the Office, the statement is verified, as required in 37 C.F.R. § 1.821(g).

**STATEMENT THAT "SEQUENCE LISTING"
AND COMPUTER READABLE COPY ARE THE SAME
AND/OR THAT PAPERS SUBMITTED INCLUDES NO NEW MATTER**

4. I hereby state:

(complete applicable item A and/or B)

- A. ☒ Each computer readable form submitted in this application, including those forms requested to be transferred from applicant's other application, is the same as the "Sequence Listing" to which it is indicated to relate.
- B. ☒ All papers accompanying this submission, or for which a request for transfer from applicants' other application, introduce no new matter.

STATUS

5. Applicant is

- ☒ a small entity. A statement:
- ☐ is attached.
- ☒ was already filed.
- ☐ other than a small entity.

(Submission—Nucleotide and/or Amino Acid Sequence [9-37]—page 3 of 6)

IDENTIFICATION OF PERSON MAKING STATEMENT

2. I, Harriet M. Strimpel
(type or print name of declarant signing below)
state the following:

ITEMS BEING SUBMITTED

3. Submitted herewith is/are:
(check each item as applicable)
- A. ☒ "Sequence Listing(s)" for the nucleotide and/or amino acid sequence(s) in this application. Each "Sequence Listing" is assigned a separate identifier as required in 37 C.F.R. § 1.821(c) and 37 C.F.R. §§ 1.822 and 1.823.
- B. ☐ An amendment to the description and/or claims, wherein reference is made to the sequence by use of the assigned identifier, as required in 37 C.F.R. § 1.821(d).
- C. ☒ A copy of each "Sequence Listing" submitted for this application in computer readable form, in accordance with the requirements of 37 C.F.R. §§ 1.821(e) and 1.824.
- D. ☐ Please transfer to this application, in accordance with 37 C.F.R. § 1.821(e), the computer readable copy(ies) from applicant's other application identified as follows:
In re application of:
Application No.: 0 / Group No.:
Filed: Examiner:
For:

The Computer readable form(s) of applicant's other application corresponds to the "Sequence Identifier(s)" of the application as follows:

Computer Readable Form
(other application)

"Sequence Identifier"
(this application)

(Submission—Nucleotide and/or Amino Acid Sequence [9-37]—page 2 of 6)

EXTENSION OF TERM

6.

NOTE: 37 C.F.R. § 1.704(b) ". . . an applicant shall be deemed to have failed to engage in reasonable efforts to conclude processing or examination of an application for the cumulative total of any periods of time in excess of three months that are taken to reply to any notice or action by the Office making any rejection, objection, argument, or other request, measuring such three-month period from the date the notice or action was mailed or given to the applicant, in which case the period of adjustment set forth in § 1.703 shall be reduced by the number of days, if any, beginning on the day after the date that is three months after the date of mailing or transmission of the Office communication notifying the applicant of the rejection, objection, argument, or other request and ending on the date the reply was filed. The period, or shortened statutory period, for reply that is set in the Office action or notice has no effect on the three-month period set forth in this paragraph."

NOTE: "Extension of Time in Patent Cases (Supplement Amendments)—If a timely and complete response has been filed after a Non-Final Office Action, an extension of time is not required to permit filing and/or entry of an additional amendment after expiration of the shortened statutory period.

If a timely response has been filed after a Final Office Action, an extension of time is required to permit filing and/or entry of a Notice of Appeal or filing and/or entry of an additional amendment after expiration of the shortened statutory period unless the timely-filed response placed the application in condition for allowance. Of course, if a Notice of Appeal has been filed within the shortened statutory period, the period has ceased to run." Notice of Dec. 10, 1985 (1061 O.G. 34-35).

NOTE: See 37 C.F.R. § 1.645 for extensions of time in interference proceedings and 37 C.F.R. § 1.550(c) for extensions of time in reexamination proceedings.

7. The proceedings herein are for a patent application and the provisions of 37 C.F.R. § 1.136 apply.

(complete (a) or (b) as applicable)

(a) ☐ Applicant petitions for an extension of time under 37 C.F.R. § 1.136 (fees: 37 C.F.R. § 1.17(a)(1)-(4)) for the total number of months checked below:

Extension (months)	Fee for other than small entity	Fee for small entity
<input type="checkbox"/> one month	\$ 110.00	\$ 55.00
<input type="checkbox"/> two months	\$ 400.00	\$ 200.00
<input type="checkbox"/> three months	\$ 920.00	\$ 460.00
<input type="checkbox"/> four months	\$ 1,440.00	\$ 720.00

Fee: \$_____

If an additional extension of time is required, please consider this a petition therefor.

(check and complete the next item, if applicable)

☐ An extension for _____ months has already been secured. The fee paid therefor of \$_____ is deducted from the total fee due for the total months of extension now requested.

Extension fee due with this request \$_____

OR

(b) ☒ Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition for extension of time.

(Submission—Nucleotide and/or Amino Acid Sequence [9-37]—page 4 of 6)

FEE PAYMENT

8. ☐ Attached is a ☐ check ☐ money order in the amount of \$ _____
- ☐ Authorization is hereby made to charge the amount of \$ _____
- ☐ to Deposit Account No. _____
- ☐ to Credit card as shown on the attached credit card information authorization form PTO-2038.

WARNING: Credit card information should **not** be included on this form as it may become public.

- ☐ Charge any additional fees required by this paper or credit any overpayment in the manner authorized above.

A duplicate of this paper is attached.

FEE DEFICIENCY

9.

NOTE: If there is a fee deficiency and there is no authorization to charge an account, additional fees are necessary to cover the additional time consumed in making up the original deficiency. If the maximum, six-month period has expired before the deficiency is noted and corrected, the application is held abandoned. In those instances where authorization to charge is included, processing delays are encountered in returning the papers to the PTO Finance Branch in order to apply these charges prior to action on the cases. Authorization to charge the deposit account for any fee deficiency should be checked. See the Notice of April 7, 1986, 1065 O.G. 31-33.

10. ☒ If any additional extension and/or fee is required, charge
- ☒ Deposit Account No. 14-0740
- ☐ Credit card as shown on the attached credit card information authorization form PTO-2038.

WARNING: Credit card information should **not** be included on this form as it may become public.

SIGNATURE(s)

Harriet M. Strimpel

(type or print name of person signing statement)

Harriet Strimpel

Signature

Date

May 14, 2002
32 Tozer Road

P.O. Address of Signatory
Beverly, MA 01915

(if applicable)

Telephone No. (978) 927-5054 X:373
Reg. No. 37008
Customer No.: 28986

- ☐ Inventor(s)
- ☐ Assignee of complete interest
- ☐ Person authorized to sign on behalf of assignee
- ☒ Practitioner of record
- ☐ Filed under Rule 34(a)
- ☐ Registration No. _____
- ☐ Other _____

(specify identity of declarant)

(complete the following, if applicable)

New England Biolabs, Inc.

(type name of assignee)

32 Tozer Road

Address of assignee

Beverly, MA 01915

Secretary

Title of person authorized to sign on behalf of
assignee

A "STATEMENT UNDER 37 C.F.R. § 3.73(b)" is attached.

Assignment recorded in PTO on 10/12/00 Filed with application

Reel _____ Frame _____ not yet recorded

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MAY 21 2002
TECH CENTER 1600/2900

Reg. No.: 37008

Tel. No.: (978) 927-5054 X:373

Customer No.: 28986

Harriet Strimpel

SIGNATURE OF PRACTITIONER

Harriet M. Strimpel

Patent Counsel

(type or print name of practitioner)

New England Biolabs, Inc.

32 Tozer Road

P.O. Address

Beverly, MA 01915

(Submission—Nucleotide and/or Amino Acid Sequence [9-37]—page 6 of 6)



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/689,343	10/12/2000	Romualdas Vaisvila	NEB-181	7976

28986 7590 05/03/2002
NEW ENGLAND BIOLABS, INC.
32 TOZER ROAD
BEVERLY, MA 01915

EXAMINER

GUZO, DAVID

ART UNIT	PAPER NUMBER
----------	--------------

1636

DATE MAILED: 05/03/2002

8

Please find below and/or attached an Office communication concerning this application or proceeding.

ACTION *Sequence*
NEW ENGLAND BIOLABS, INC.
32 TOZER RD, Beverly, MA 01915
Date Mailed: *5-13-02*
Docketed For: *6-0202*
By: *mf*



**UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office**

Address: ASSISTANT COMMISSIONER FOR PATENTS

Washington, D.C. 20231

APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
---------------------------------	-------------	---	---------------------



EXAMINER

ART UNIT	PAPER
----------	-------

8

DATE MAILED:

Pl ase find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

- SEE ATTACHMENT -

Attachment

The reply filed 4/4/02 is not fully responsive to the Office communication mailed 3/19/02 for the reason(s) set forth below or on the attached Notice To Comply With The Sequence Rules or Raw Sequence Error Report.


Since the above-mentioned reply appears to be *bona fide*, applicant is given a TIME PERIOD of ONE (1) MONTH or THIRTY (30) DAYS from the mailing date of this notice, whichever is longer, within which to supply the omission or correction in order to avoid abandonment. EXTENSIONS OF THIS TIME PERIOD MAY BE GRANTED UNDER 37 CFR 1.136(a).

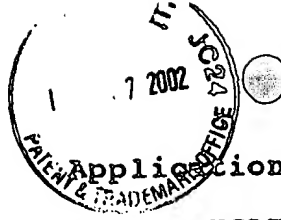
Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Guzo whose telephone number is (703) 308-1906. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 5:30 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Irem Yucel, can be reached on (703) 305-1998. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-4242.

Any inquiry of a general nature or relating to the status of this application or proceeding or relating to attachments to this Office Action should be directed to Patent Analyst Zeta Adams whose telephone number is (703) 305-3291.

David Guzo
April 30, 2002


DAVID GUZO
PRIMARY EXAMINER



Application No.

09/689343**NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES**

The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 CFR 1.821 - 1.825 for the following reason(s):

☒ 1. This application clearly fails to comply with the requirements of 37 CFR 1.821 - 1.825. Applicant's attention is directed to these regulations, published at 1114 OG 29, May 15, 1990 and at 55 FR 18230, May 1, 1990.

☐ 2. This application does not contain, as a separate part of the disclosure on paper copy, a "Sequence Listing" as required by 37 CFR 1.821(c).

☐ 3. A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 CFR 1.821(e).

☒ 4. A copy of the "Sequence Listing" in computer readable form has been submitted. However, the content of the computer readable form does not comply with the requirements of 37 CFR 1.822 and/or 1.823, as indicated on the attached copy of the marked-up "Raw Sequence Listing."

☐ 5. The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A substitute computer readable form must be submitted as required by 37 CFR 1.825(d).

☐ 6. The paper copy of the "Sequence Listing" is not the same as the computer readable form of the "Sequence Listing" as required by 37 CFR 1.821(e).

☐ 7.

Other: _____

Applicant must provide:

☒ An initial or substitute computer readable form (CRF) copy of the "Sequence Listing"

☒ An initial or substitute paper copy of the "Sequence Listing", as well as an amendment directing its entry into the specification

☒ A statement that the content of the paper and computer readable copies are the same and, where applicable, include no new matter, as required by 37 CFR 1.821(e) or 1.821(f) or 1.821(g) or 1.825(b) or 1.825(d)

For questions regarding compliance with these requirements, please contact:

For Rules Interpretation, call (703) 308-1123

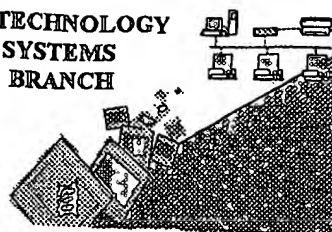
For CRF submission help, call (703) 308-4212

For PatentIn software help, call (703) 557-0400



Applicant's Copy

BIOTECHNOLOGY
SYSTEMS
BRANCH



TECH. CENTER 1600/2900

APR 25 2002

RECEIVED

#7

RAW SEQUENCE LISTING ERROR REPORT

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 09/689,343A
Source: 1600
Date Processed by STIC: 4/16/2002

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.

PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:

- 1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,
- 2) TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY

FOR CRF SUBMISSION QUESTIONS, PLEASE CONTACT MARK SPENCER, 703-308-4212.

FOR SEQUENCE RULES INTERPRETATION, PLEASE CONTACT ROBERT WAX, 703-308-4216.

PATENTIN 2.1 e-mail help: patin21help@uspto.gov or phone 703-306-4119 (R. Wax)

PATENTIN 3.0 e-mail help: patin3help@uspto.gov or phone 703-306-4119 (R. Wax)

TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE CHECKER
VERSION 3.1 PROGRAM, ACCESSIBLE THROUGH THE U.S. PATENT AND
TRADEMARK OFFICE WEBSITE. SEE BELOW FOR ADDRESS:

<http://www.uspto.gov/web/offices/pac/checker>

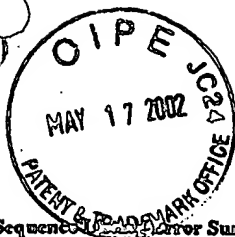
Applicants submitting genetic sequence information electronically on diskette or CD-Rom should be aware that there is a possibility that the disk/CD-Rom may have been affected by treatment given to all incoming mail.

Please consider using alternate methods of submission for the disk/CD-Rom or replacement disk/CD-Rom.

Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

1. EFS-Bio (<<http://www.uspto.gov/efb/efs/downloads/documents.htm>> , EFS Submission User Manual - ePAVE)
2. U.S. Postal Service: U.S. Patent and Trademark Office, Box Sequence, P.O. Box 2327, Arlington, VA 22202
3. Hand Carry directly to:
U.S. Patent and Trademark Office, Technology Center 1600, Reception Area, 7th Floor, Examiner Name,
Sequence Information, Crystal Mall One, 1911 South Clark Street, Arlington, VA 22202
Or
U.S. Patent and Trademark Office, Box Sequence, Customer Window, Lobby, Room 1B03, Crystal Plaza Two,
2011 South Clark Place, Arlington, VA 22202
4. Federal Express, United Parcel Service, or other delivery service to: U.S. Patent and Trademark Office,
Box Sequence, Room 1B03-Mailroom, Crystal Plaza Two, 2011 South Clark Place, Arlington, VA 22202

Revised 01/29/2002



Raw Sequence Error Summary

TECH CENTER 100/2900

APR 25 2002

RECEIVED

ERROR DETECTED

SUGGESTED CORRECTION

SERIAL NUMBER: 09/689,343A

ATTN: NEW RULES CASES: PLEASE DISREGARD ENGLISH "ALPHA" HEADERS, WHICH WERE INSERTED BY PTO SOFTWARE

- 1 Wrapped Nucleic
 Wrapped Amino
The number/text at the end of each line "wrapped" down to the next line. This may occur if your file was retrieved in a word processor after creating it. Please adjust your right margin to .3; this will prevent "wrapping."
- 2 Invalid Line Length
The rules require that a line not exceed 72 characters in length. This includes white spaces.
- 3 Misaligned Amino
 Numbering
The numbering under each 5th amino acid is misaligned. Do not use tab codes between numbers; use space characters, instead.
- 4 Non-ASCII
The submitted file was not saved in ASCII(DOS) text, as required by the Sequence Rules. Please ensure your subsequent submission is saved in ASCII text.
- 5 Variable Length
Sequence(s) contain n's or Xaa's representing more than one residue. Per Sequence Rules, each n or Xaa can only represent a single residue. Please present the maximum number of each residue having variable length and indicate in the <220>-<223> section that some may be missing.
- 6 ☒ PatentIn 2.0
 "bug"
A "bug" in PatentIn version 2.0 has caused the <220>-<223> section to be missing from amino acid sequences(s) 4. Normally, PatentIn would automatically generate this section from the previously coded nucleic acid sequence. Please manually copy the relevant <220>-<223> section to the subsequent amino acid sequence. This applies to the mandatory <220>-<223> sections for Artificial or Unknown sequences.
- 7 Skipped Sequences
 (OLD RULES)
Sequence(s) missing. If intentional, please insert the following lines for each skipped sequence:
(2) INFORMATION FOR SEQ ID NO:X: (insert SEQ ID NO where "X" is shown)
(i) SEQUENCE CHARACTERISTICS: (Do not insert any subheadings under this heading)
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:X: (insert SEQ ID NO where "X" is shown)
This sequence is intentionally skipped

Please also adjust the "(ii) NUMBER OF SEQUENCES:" response to include the skipped sequences.
- 8 Skipped Sequences
 (NEW RULES)
Sequence(s) missing. If intentional, please insert the following lines for each skipped sequence.
<210> sequence id number
<400> sequence id number
000
- 9 Use of n's or Xaa's
 (NEW RULES)
Use of n's and/or Xaa's have been detected in the Sequence Listing.
Per 1.823 of Sequence Rules, use of <220>-<223> is MANDATORY if n's or Xaa's are present.
In <220> to <223> section, please explain location of n or Xaa; and which residue n or Xaa represents.
- 10 Invalid <213>
 Response
Per 1.823 of Sequence Rules, the only valid <213> responses are: Unknown, Artificial Sequence, or scientific name (Genus/species). <220>-<223> section is required when <213> response is Unknown or is Artificial Sequence
- 11 Use of <220>
Sequence(s) missing the <220> "Feature" and associated numeric identifier and responses.
Use of <220> to <223> is MANDATORY if <213> "Organism" response is "Artificial Sequence" or "Unknown." Please explain source of genetic material in <220> to <223> section.
(See "Federal Register," 06/01/1998, Vol. 63, No. 104, pp. 29631-32) (Sec. 1.823 of Sequence Rules)
- 12 PatentIn 2.0
 "bug"
Please do not use "Copy to Disk" function of PatentIn version 2.0. This causes a corrupted file, resulting in missing mandatory numeric identifier and responses (as indicated on raw sequence listing). Instead, please use "File Manager" or any other manual means to copy file to floppy disk.
- 13 Misuse of n
n can only be used to represent a single nucleotide in a nucleic acid sequence. N is not used to represent any value not specifically a nucleotide.

AMC/MH - Biotechnology Systems Branch - 08/21/2001



1636

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/689,343A

DATE: 04/16/2002

TIME: 11:52:53

Input Set : A:\NEB-181.txt

Output Set: N:\CRF3\04162002\I689343A.raw

see pp. 5-6

Does Not Comply
Corrected Diskette Needed

3 <110> APPLICANT: VAISVILA, ROMUALDAS
 4 MORGAN, RICHARD D.
 5 KUCERA, REBECCA B.
 6 CLAUS, TOBY E.
 7 RALEIGH, ELISABETH A.
 9 <120> TITLE OF INVENTION: METHOD FOR CLONING AND PRODUCING THE MseI RESTRICTION
 10 ENDONUCLEASE
 12 <130> FILE REFERENCE: NEB-181
 14 <140> CURRENT APPLICATION NUMBER: 09/689,343A
 15 <141> CURRENT FILING DATE: 2000-10-12
 17 <160> NUMBER OF SEQ ID NOS: 9
 19 <170> SOFTWARE: PatentIn Ver. 2.0
 21 <210> SEQ ID NO: 1
 22 <211> LENGTH: 903
 23 <212> TYPE: DNA
 24 <213> ORGANISM: Micrococcus sp.
 26 <220> FEATURE:
 27 <221> NAME/KEY: CDS
 28 <222> LOCATION: (1)..(900)
 30 <400> SEQUENCE: 1

31	atg cct atc tcg acc gtc tgg acg ccg gac gga gac gac ctc atc gtg	48
32	Met Pro Ile Ser Thr Val Trp Thr Pro Asp Gly Asp Asp Leu Ile Val	
33	1 5 10 15	
35	gag gcg gac aac ctc gat ttc att caa acg ctc ccc gac gcg agc ttc	96
36	Glu Ala Asp Asn Leu Asp Phe Ile Gln Thr Leu Pro Asp Ala Ser Phe	
37	20 25 30	
39	cga atg atc tac atc gat ccg ccg ttc aac aca ggg cga acg cag cgg	144
40	Arg Met Ile Tyr Ile Asp Pro Pro Phe Asn Thr Gly Arg Thr Gln Arg	
41	35 40 45	
43	ctt cag tcg ctc aag acg acc cgc tcg gtc aca ggg tcg cga gtc ggc	192
44	Leu Gln Ser Leu Lys Thr Thr Arg Ser Val Thr Gly Ser Arg Val Gly	
45	50 55 60	
47	ttc aaa ggc cag acg tac gac acg gtc aag agc act ctg cac tcg tat	240
48	Phe Lys Gly Gln Thr Tyr Asp Thr Val Lys Ser Thr Leu His Ser Tyr	
49	65 70 75 80	
51	gac gac gct ttc acc gac tat tgg tcg ttc ctc gaa ccg cgt ctc ctg	288
52	Asp Asp Ala Phe Thr Asp Tyr Trp Ser Phe Leu Glu Pro Arg Leu Leu	
53	85 90 95	
55	gag gct tgg cgg ttg ctc acc cct gac ggc gcg ctc tat ctt cat ctg	336
56	Glu Ala Trp Arg Leu Leu Thr Pro Asp Gly Ala Leu Tyr Leu His Leu	
57	100 105 110	
59	gat tac cgc gag gtt cac tac gcc aag gtc gtc ctc gac gcg atg ttc	384
60	Asp Tyr Arg Glu Val His Tyr Ala Lys Val Val Leu Asp Ala Met Phe	

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/689,343A

DATE: 04/16/2002

TIME: 11:52:53

Input Set : A:\NEB-181.txt

Output Set: N:\CRF3\04162002\I689343A.raw

```

61          115          120          125
63 gga cgc gaa agc ttc ctg aac gag ctg atc tgg gcg tac gac tac ggc 432
64 Gly Arg Glu Ser Phe Leu Asn Glu Leu Ile Trp Ala Tyr Asp Tyr Gly
65          130          135          140
67 gcg cgc tcg aag agc aag tgg ccc acc aag cac gac aac atc ctc gtg 480
68 Ala Arg Ser Lys Ser Lys Trp Pro Thr Lys His Asp Asn Ile Leu Val
69 145          150          155          160
71 tat gtg aag gac ccg aac aac tac gtc tgg aac ggt cag gat gta gat 528
72 Tyr Val Lys Asp Pro Asn Asn Tyr Val Trp Asn Gly Gln Asp Val Asp
73          165          170          175
75 cgc gag ccc tac atg gcg ccc ggg ctc gtt aca ccc gag aag gta gcg 576
76 Arg Glu Pro Tyr Met Ala Pro Gly Leu Val Thr Pro Glu Lys Val Ala
77          180          185          190
79 ctt ggc aag ctg ccc acc gac gtc tgg tgg cac aca atc gtt ccg cct 624
80 Leu Gly Lys Leu Pro Thr Asp Val Trp Trp His Thr Ile Val Pro Pro
81          195          200          205
83 gcg agc aaa gag cgc acc ggg tac gcg aca cag aag ccg gtc ggc atc 672
84 Ala Ser Lys Glu Arg Thr Gly Tyr Ala Thr Gln Lys Pro Val Gly Ile
85          210          215          220
87 atc cgt cgc atg att cag gcg agc agc aat gaa ggc gac tgg gtt ctg 720
88 Ile Arg Arg Met Ile Gln Ala Ser Ser Asn Glu Gly Asp Trp Val Leu
89 225          230          235          240
91 gat ttc ttc gct ggt agt ggg acg acc ggc gcc gcg gcc cgc cag ctc 768
92 Asp Phe Phe Ala Gly Ser Gly Thr Thr Gly Ala Ala Ala Arg Gln Leu
93          245          250          255
95 gga cgc cgt ttt gtg ctc gta gac gtc aac cca gaa gca atc gcg gta 816
96 Gly Arg Arg Phe Val Leu Val Asp Val Asn Pro Glu Ala Ile Ala Val
97          260          265          270
99 atg gca aaa cgg ttg gat gac ggg gca ttg gac acc agc gtg acg atc 864
100 Met Ala Lys Arg Leu Asp Asp Gly Ala Leu Asp Thr Ser Val Thr Ile
101          275          280          285
103 gtg cag act ccc cag agt gac cca cga acc gac gga tga 903
104 Val Gln Thr Pro Gln Ser Asp Pro Arg Thr Asp Gly
105          290          295          300
108 <210> SEQ ID NO: 2.
109 <211> LENGTH: 300
110 <212> TYPE: PRT
111 <213> ORGANISM: Micrococcus sp.
113 <400> SEQUENCE: 2
114 Met Pro Ile Ser Thr Val Trp Thr Pro Asp Gly Asp Asp Leu Ile Val
115 1 5 10 15
117 Glu Ala Asp Asn Leu Asp Phe Ile Gln Thr Leu Pro Asp Ala Ser Phe
118 20 25 30
120 Arg Met Ile Tyr Ile Asp Pro Pro Phe Asn Thr Gly Arg Thr Gln Arg
121 35 40 45
123 Leu Gln Ser Leu Lys Thr Thr Arg Ser Val Thr Gly Ser Arg Val Gly
124 50 55 60
126 Phe Lys Gly Gln Thr Tyr Asp Thr Val Lys Ser Thr Leu His Ser Tyr
127 65 70 75 80

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/689,343A

DATE: 04/16/2002

TIME: 11:52:53

Input Set : A:\NEB-181.txt

Output Set: N:\CRF3\04162002\I689343A.raw

```

129 Asp Asp Ala Phe Thr Asp Tyr Trp Ser Phe Leu Glu Pro Arg Leu Leu
130      85      90      95
132 Glu Ala Trp Arg Leu Leu Thr Pro Asp Gly Ala Leu Tyr Leu His Leu
133      100      105      110
135 Asp Tyr Arg Glu Val His Tyr Ala Lys Val Val Leu Asp Ala Met Phe
136      115      120      125
138 Gly Arg Glu Ser Phe Leu Asn Glu Leu Ile Trp Ala Tyr Asp Tyr Gly
139      130      135      140
141 Ala Arg Ser Lys Ser Lys Trp Pro Thr Lys His Asp Asn Ile Leu Val
142 145      150      155      160
144 Tyr Val Lys Asp Pro Asn Asn Tyr Val Trp Asn Gly Gln Asp Val Asp
145      165      170      175
147 Arg Glu Pro Tyr Met Ala Pro Gly Leu Val Thr Pro Glu Lys Val Ala
148      180      185      190
150 Leu Gly Lys Leu Pro Thr Asp Val Trp Trp His Thr Ile Val Pro Pro
151      195      200      205
153 Ala Ser Lys Glu Arg Thr Gly Tyr Ala Thr Gln Lys Pro Val Gly Ile
154      210      215      220
156 Ile Arg Arg Met Ile Gln Ala Ser Ser Asn Glu Gly Asp Trp Val Leu
157 225      230      235      240
159 Asp Phe Phe Ala Gly Ser Gly Thr Thr Gly Ala Ala Ala Arg Gln Leu
160      245      250      255
162 Gly Arg Arg Phe Val Leu Val Asp Val Asn Pro Glu Ala Ile Ala Val
163      260      265      270
165 Met Ala Lys Arg Leu Asp Asp Gly Ala Leu Asp Thr Ser Val Thr Ile
166      275      280      285
168 Val Gln Thr Pro Gln Ser Asp Pro Arg Thr Asp Gly
169      290      295      300
172 <210> SEQ ID NO: 3
173 <211> LENGTH: 1236
174 <212> TYPE: DNA
175 <213> ORGANISM: Unknown
177 <220> FEATURE:
178 <223> OTHER INFORMATION: Description of Unknown Organism: ENVIRONMENTAL DNA
180 <220> FEATURE:
181 <221> NAME/KEY: CDS
182 <222> LOCATION: (1)..(1233)
184 <220> FEATURE:
185 <223> OTHER INFORMATION: At position 594, N = G, A, C or T
187 <400> SEQUENCE: 3
188 atg cct aca ctg gat tgg ccc ggt aaa cag tta agc ttc cca cca gct 48
189 Met Pro Thr Leu Asp Trp Pro Gly Lys Gln Leu Ser Phe Pro Pro Ala
190 1 5 10 15
192 acc tcc ttg cat ctg gag agt gtg gtc act gag gga gcg gag tca ccg 96
193 Thr Ser Leu His Leu Glu Ser Val Val Thr Glu Gly Ala Glu Ser Pro
194 20 25 30
196 cct aat cgt ctg att tgg gcg gac aac ctg ccg cta atg gta gat ttg 144
197 Pro Asn Arg Leu Ile Trp Ala Asp Asn Leu Pro Leu Met Val Asp Leu
198 35 40 45

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/689,343A

DATE: 04/16/2002

TIME: 11:52:53

Input Set : A:\NEB-181.txt

Output Set: N:\CRF3\04162002\I689343A.raw

```

266 Glu Gly Val Ser Phe Thr Phe Glu Arg Gln Glu Thr Phe Thr Leu Pro
267 305                               310                               315                               320
269 atc cag cca ctt cca cca gat tgg ttg atc atc gcc gag gag cag att      1008
270 Ile Gln Pro Leu Pro Pro Asp Trp Leu Ile Ile Ala Glu Glu Gln Ile
271                               325                               330                               335
273 cgc ctc caa gca ccc ttt ctc gta gat ttt tgg gaa gtg gac gat caa      1056
274 Arg Leu Gln Ala Pro Phe Leu Val Asp Phe Trp Glu Val Asp Asp Gln
275                               340                               345                               350
277 tgg gat ggc aaa atc ttc cgc agc cgt cat caa ggc tta cgc tcc cgc      1104
278 Trp Asp Gly Lys Ile Phe Arg Ser Arg His Gln Gly Leu Arg Ser Arg
279                               355                               360                               365
281 ctt cag gag cag gcg ccg ctc tct cta cca ttg acc ggg aat gga ctg      1152
282 Leu Gln Glu Gln Ala Pro Leu Ser Leu Pro Leu Thr Gly Asn Gly Leu
283                               370                               375                               380
285 ttg tgt gta cgg gta gtg agc cgt gaa ggg gaa tac tat gag ttc aca      1200
286 Leu Cys Val Arg Val Val Ser Arg Glu Gly Glu Tyr Tyr Glu Phe Thr
287 385                               390                               395                               400
289 ggt cga gcc gat agc cct cac ccc gta tcg ttt tga
290 Gly Arg Ala Asp Ser Pro His Pro Val Ser Phe      1236
291                               405                               410
294 <210> SEQ ID NO: 4
295 <211> LENGTH: 411
296 <212> TYPE: PRT
297 <213> ORGANISM: Unknown see item 6 on Ena summary sheet
299 <220> FEATURE:
300 <223> OTHER INFORMATION: At position 198, Xaa - any amino acid
302 <400> SEQUENCE: 4
303 Met Pro Thr Leu Asp Trp Pro Gly Lys Gln Leu Ser Phe Pro Pro Ala
304 1                               5                               10                               15
306 Thr Ser Leu His Leu Glu Ser Val Val Thr Glu Gly Ala Glu Ser Pro
307                               20                               25                               30
309 Pro Asn Arg Leu Ile Trp Ala Asp Asn Leu Pro Leu Met Val Asp Leu
310                               35                               40                               45
312 Leu Ala Glu Tyr Glu Gly Lys Ile Asp Leu Ile Tyr Ala Asp Pro Pro
313                               50                               55                               60
315 Phe Phe Thr Asp Arg Thr Tyr Ala Ala Arg Ile Gly His Gly Glu Asp
316 65                               70                               75                               80
318 Ser Arg Arg Pro Gln Thr Trp Gln Leu Ala Glu Gly Tyr Thr Asp Glu
319                               85                               90                               95
321 Trp Lys Asp Leu Asp Glu Tyr Leu Asp Phe Leu Tyr Pro Arg Leu Val
322                               100                              105                              110
324 Leu Met Tyr Arg Leu Leu Ala Pro His Gly Thr Leu Tyr Leu His Leu
325                               115                              120                              125
327 Asp Trp His Ala Asn Ala Tyr Val Arg Val Leu Leu Asp Glu Ile Phe
328                               130                              135                              140
330 Gly Arg Gln Arg Phe Leu Asn Glu Ile Val Trp Ile Tyr His Gly Pro
331 145                               150                              155                              160
333 Ser Ala Ile Arg Arg Ala Phe Lys Arg Lys His Asp Thr Ile Leu Val
334                               165                              170                              175

```


RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/09/689,343A

DATE: 04/16/2002
TIME: 11:52:54

Input Set : A:\NEB-181.txt
Output Set: N:\CRF3\04162002\I689343A.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:3; N Pos. 594
Seq#:3; Xaa Pos. 198
Seq#:4; Xaa Pos. 198

Use of <220> Feature(NEW RULES):

Sequence(s) are missing the <220> Feature and associated headings.

Use of <220> to <223> is MANDATORY if <213> ORGANISM is "Artificial Sequence" or "Unknown". Please explain source of genetic material in <220> to <223> section (See "Federal Register," 6/01/98, Vol. 63, No. 104, pp.29631-32) (Sec.1.823 of new Rules)

Seq#:6

another error



Docket No.: NEB-181

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: R. Vaisvila, et al. EXAMINER: David Guzo

SERIAL NO.: 09/689,343 GROUP: 1636

FILED: October 12, 2000

FOR: Method For Cloning And Producing The *MseI*
Restriction Endonuclease

Hon. Commissioner of Patents
and Trademarks
Box Sequence, P.O. Box 2327
Arlington, VA 22202

RECEIVED
MAY 21 2002
TECH CENTER 1600/2900

Sir:

SEQUENCE LISTING

In accordance with 37 C.F.R. §§1.821-1.825, Applicants hereby request that the enclosed Sequence Listing be included in the above-identified Specification. No new matter is added by this amendment to the specification.

Respectfully submitted,

NEW ENGLAND BIOLABS, INC.

Date: May 14, 2002

Harriet M. Strimpel
Harriet M. Strimpel
(Reg. No.: 37008)
Attorney for Applicant
32 Tozer Road
Beverly, MA 01915